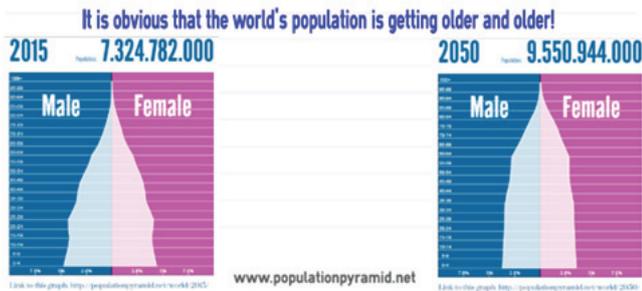


# PATIENT RELATIONSHIP MANAGEMENT ON THE CLOUD

# What is Patient Relationship Management (PRM)?

## The World's Population Pyramid

This is a graphical illustration that shows the distribution of various age groups in a population in 2015 and in 2050.



The world's population is getting older and older. Population ageing is a phenomenon that occurs when the median age of a country or region rises due to rising life expectancy and declining birth rates. There has been an increase in life expectancy which causes the ageing of population.

Healthcare organizations have realized that having long-term relationships with their customers can help improve their satisfaction and general health. As a result they want to build strong relationships with their

patients. A PRM can improve patients' care through more personalized treatments, allow health organizations to understand patients' needs and how their treatment works, improve communications, permit physicians to understand how a patients' treatment is progressing and gauge their level of satisfaction. Generally, a PRM provides strong benefits not only for patients but also for Healthcare organizations. A hospital's operation can be more customer-centric than ever before.

Healthcare organizations aim at offering customer-centric environments in order to increase their customers' satisfaction, quality of care and well-being. A PRM solution can connect existing systems and data in order to make inter-clinic communications easier and the patient-to-clinic relationship focused on health improvement. The competition among healthcare providers is tremendous and providing patients with better services through the use of PPM is a factor that gives a **competitive advantage**.

## BENEFITS OF PRM:

- **Patient Satisfaction:** With the use of PRM you can provide personalized service and better understand every single patient.
- **Better Communication:** The PRM system is a tool through which you can create and maintain better communication with the patient and better understand his needs.
- **Chronic Disease Cases:** The system can help patients manage chronic diseases with educational sessions and reminders for their appointments and treatment plans.
- **Improvement of Healthcare systems:** The PRM system can be used as a tool for improving the quality of Healthcare Systems and enable the transition to more patient-oriented care.
- **Improvement of Medical Staffe (Doctors, Nurses etc.):** The PRM can improve staff collaboration from different departments within a healthcare organization.
- **Task Management for Pharmacists:** With a PRM application pharmacists can better understand the patient care process in hospitals, understand which treatment satisfies patients' needs, help their self-awareness and improve their professional skills.

# PRM on the Cloud

PRM defines an Internet based set of services to help both patients and health care providers to develop and maintain long-lasting relationships.



A Healthcare system has to be cost effective, efficient and provide high-quality services. In order to achieve all these, continuous and systematic innovation is necessary. It is generally accepted that Cloud computing can improve healthcare services, benefit healthcare research and improve information processing. According to Schweitzer<sup>1</sup>, Haughton<sup>2</sup> and Kabachinski<sup>3</sup>, "Cloud computing can reduce Electronic Health Records (EHR) startup expenses, such as hardware, software, networking, personnel, licensing fees, and therefore its adoption is encouraged".

Anderson<sup>4</sup> et al outlined the major problems in biomedical research and analysis, like data-handling problems, complexity and expensive or unavailable computational solution to research problems. **Cloud computing can face and overcome these difficulties.**

These are many studies that prove the ability of cloud computing to improve healthcare services. For example, Rolim<sup>5</sup> et al proposed a Cloud-based system to automate the procedure of collecting patients' data

through a network of sensors connected to medical devices and to deliver these data to a Cloud for storage and processing. This means that users can have access to their data 7-days-a-week in real time and eliminate manual processing errors.

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<sup>1</sup> Schweitzer EJ. Reconciliation of the cloud computing model with US federal electronic health record regulations. *J Am Med Inform Assoc.* 2011 Jul 4

<sup>2</sup> Haughton J. Year of the underdog: Cloud-based EHRs. *Health Manag Technol.* 2011

<sup>3</sup> Kabachinski J. What's the forecast for cloud computing in healthcare? *Biomed Instrum Technol.* 2011

<sup>4</sup> Anderson NR, Lee ES, Brockenbrough JS, Minie ME, Fuller S, Brinkley J, Tarczy-Hornoch P. Issues in biomedical research data management and analysis: needs and barriers. *J Am Med Inform Assoc.* 2007

<sup>5</sup> Rolim CO, Koch FL, Westphall CB, Werner J, Fracalossi A, Salvador GS. A cloud computing solution for patient's data collection in health care institutions.

# Protected Healthcare Information (PHI)

*"Protected health information (PHI) is any information in the medical record or designated record set that can be used to identify an individual and that was created, used, or disclosed in the course of providing a health care service such as diagnosis or treatment".(Wikipedia)*

One of the biggest concerns with moving healthcare data on the Cloud is the security of personal data. The Cloud provider has to store, monitor and manage PHI, so it is very important to ensure protection against any unauthorized access. The PHI may include information like personal details, social insurance numbers, medical records, account numbers, photos etc. The storage of PHI on Cloud centers is indisputably safer than in-house, because all Cloud providers spend considerable resources solving security issues and use strong encryption methods. Also, they replicate their data in multiple locations, which provides a high level of disaster recovery. Finally, a cloud provider can reallocate security resources for filtering, traffic shaping or encryption in order to increase support for defensive measures.

In conclusion, with the use of Cloud computing, healthcare services and research can become more flexible, affordable, efficient and effective. The adoption of PRM will improve customer service and prevent any arisen problem between healthcare organizations and patients.

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